

# Work Order ID 60314

Thursday, July 01, 2010 1:13:26 PM



Page 1

Item ID: D6101-007

Accept



Setup Start



Revision ID:

Item Name: Saddle Billet

Stop



Start Date: 7/1/2010 Start Qty: 40.00



Cust Item ID:

Required Date: 7/8/2010 Req'd Qty: 40.00



Customer:

Reference:

Approvals:

Process Plan:

*H*

Date: *10-7-11*

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D6101

Rev B

100

0.00



PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: *12204*

a) Description: Alluminum billet

b) 7.750" x 8.250" x 2.50" thick

c) Tolerance on all dimensions are +0.030"/-0.000"

d) Grain direction along 7.750" length

e) Material: 7075-T7351 (QQ-A-250/12)

f) Material certification required

*CZ 10/7/11*

*(40)*

110

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure material certification is attached

*10/7/11*

*(40)*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 60314**

Thursday, July 01, 2010 1:13:26 PM

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Item ID: D6101-007

Accept



Setup Start



Revision ID:

Item Name: Saddle Billet

Stop



Start Date: 7/1/2010 Start Qty: 40.00



Cust Item ID:

Required Date: 7/8/2010 Req'd Qty: 40.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120



QC

Quality Control

QC6- Inspect dimensions to drawing

0.00

*mf 10/6/7/19*

Memo

0.00

Ensure Material certification comply to Dwg D6101

*40* *10*

130



Packaging

Packaging

Identify as per dwg & Stock Location: *MAT* 0.00

Memo

0.00

*mf 10-7-20*

140



QC

Quality Control

QC21- Final Inspection - Work Order Release 0.00

Memo

0.00

*mf 10-7-20*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector	
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

**NOTE:** Date & initial all entries

# Picklist Print

Thursday, July 01, 2010 1:13:30 PM

Page 1

Work Order ID: 60314

Parent Item: D6101-007

Parent Item Name: Saddle Billet


Start Date: 7/1/2010

Required Date: 7/8/2010

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP A: ☐01.05.04 ☐New Issue ☐EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-007P  7075-T7351 8.25X7.75X2.5		Purchased	No			110	Each	0.0000	1	40		10/7/10	(40)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

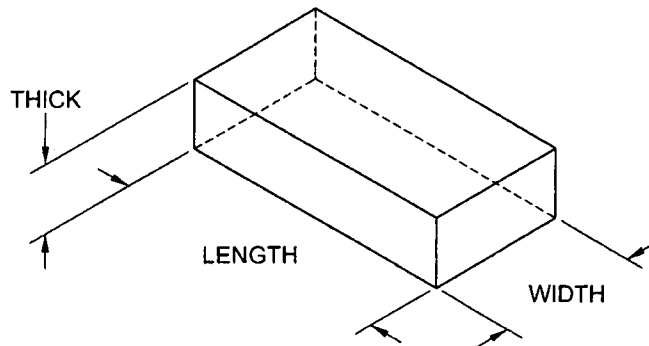
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

**B**

**RELEASED**  
09/07/15/WB

*10/07/19*

*0210/711*

*W10: 60314*

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	<small>COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

**DART**  
aerospaceDart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053**PURCHASE ORDER**Purchase Order ID **PO12204**

Purchase Order Date 7/01/10

PO Print Date 7/01/10

Page Number 1 of 1

**Order From :**

VC-MET001

METAUX CASTLE  
A.M. CASTLE & CO. (CANADA) INC. - BOX B9204 PO BOX 9100  
TORONTO, ON M4Y 3A5  
CA**Contact Name****Vendor Phone****Vendor Fax****Vendor Account Nbr**

514 694 9575

514 695 3281

**Buyer****Requisition Nbr****Tax Resale Nbr****Terms****Currency****FOB**

Chantal Lavoie

10127-2607

Net 30

CAD

**Ship To :**DART AEROSPACE LTD 1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA**FAXED**  
C 7/10/10  
e-mail

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6101-007P	7075-T7351 8.25X7.75X2.5	7/16/10 Yes	40.00 Each	Yours ppd	\$79.2800	\$3,171.20

**Special Inst:** AS PER DWG D6101 REV. B  
B60314  
SIZE: 7.750" X 8.250" X 2.50" THICK  
TOLERANCE ON ALL DIMENSION ARE  
+0.030"/-0.000"  
GRAIN DIRECTION ALONG 7.750"  
LENGTH  
MATERIAL: 7075-T7351 (QQ-A-250/12)**PO Total:****\$3,171.20****MATERIAL CERTIFICATION  
REQ'D UPON DELIVERY**No substitution or deviation without  
consent.  
Certificate of Conformity or Material  
Certification required when applicable

Change Nbr: 1

Change Date: 7/01/10



**Castle Metals®**

A. M. Castle &amp; Co.

**PACKING SLIP**

Page 1 of 1

Shipment No:412213

Shipment Not Yet

<b>Ship From:</b>		<b>Sold To:</b>		<b>Ship To:</b>		<b>Deliver To:</b>	
Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b>	<b>F.O.B.</b>	<b>Freight Terms</b>		<b>Carrier</b>	<b>BOL No</b>		
15-JUL-10	ORIGIN	Prepaid		MANITOULIN	412213-2		

<b>Shipment Details</b>	<b>Final Destination Branch - MON</b>
-------------------------	---------------------------------------

Order No	Line No	Item No	Description				
852276	1	6879.MO	2.5000.PL.7075.T7351.ALUMINUM.48.5000.144.5000 CUT RECTANGLE TO 8.25 IN ( + .0620/- .0000 IN (GRAIN TO RUN ALONG 7.75")) X 7.75 IN ( + .0620/- .0000 IN (GRAIN TO RUN ALONG 7.75")) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12				
Purchase Order No		Part Number		Ordered Qty		Invoice Qty	
P012204				40 PCS		40 PCS	
Details							
Delivery No.	Mill	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty (LBS)
34330312		407251		4			66.13
34330312		485715A7		12			198.38
34330312		422799A7		24			396.76

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:	Date:
--	-------

*AmL 10/07/19*

# CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Malcolm Murphy  
Director of Manufacturing Davenport Works

Kenton P. Young  
Quality Assurance Manager

993937	0				
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item	Page
2009-01-10	3286081	00000	1000062304-1		1
P.O. No./Govt Contract No.	Customer	Alcoa Item	Mfg Order		
01-16542	CASTLE A M	0041005634R08	DS-62304-1		

Ship To: A M CASTLE & COMPANY  
3400 NORTH WOLF ROAD  
BAY #6  
FRANKLIN PARK 60131 IL

Item Description  
2.5 IN TK (+.0750 -.0750) X 48.5 IN W (+.3125 - 0.000) X 144.5 IN LN (+.5 -0.0) CAT D 164168 (N) A/T 7075-  
T7351 RECTANGLE MILL FINISH, US1 3MM DEAD ZONE REQ'D BOTH SIDES,  
SAMED IAC 6879. EXC\_MRK A97075-60 REV 22 AMS-QQ-A-250/12 IS 2007 AMS-  
STD-2154 EXC\_MRK AMS4078 REV G EXC\_MRK ASTM209  
REV 07 ASTM594 REV 06 BSS7055 REV A  
EXC\_MRK MMS159 REV N PS21212 REV K ((MARKED))  
KRAFT PAPER INTERLEAVED  
MAX GROSS SKID WGT: 4500 LB QUAN TOL +/-  
25 % US1 CL A 3 MM CQR 0137890 REV 17 CUST REQ 08-11-  
04 \*\*\* W/E 09-01-17 \*\*\*

Num	Package Ticket	Lot	Weight	Quantity	UOM	Pc Id/Serl
1	709656	407251	3545	2	PC	

Notes for CQR: 0137890.17

PRODUCT PRODUCED TO THE REQUIREMENTS OF ASTM2375 ALSO MEET THE REQUIREMENTS OF AMS-STD-2154. PRODUCT PRODUCED TO THE REQUIREMENTS OF AMS-STD-2154 ALSO MEET THE REQUIREMENTS OF ASTM2375.  
THIS MATERIAL HAS BEEN ULTRASONICALLY INSPECTED FULLY IMMERSION - TYPE I.  
PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF AMS-QQ-A-250/12 ALSO MEETS THE REQUIREMENTS OF QQ-A-250/12P. PRODUCT PRODUCED AND MARKED TO THE REQUIREMENTS OF QQ-A-250/12 F ALSO MEETS THE REQUIREMENTS OF AMS-QQ-A-250/12.  
Exception to Spec A97075-60 ; Revisn: 22 Issue: Letter dated 2007-05-14 from AHERN, DENNIS T to PLATTER, BARB .

CQR: 0137890.17 -Specification Limits

Temp	Dir	UTS	TYS	ELAD
		KSI	KSI	PCT
T7351	Long Transv.	Max	63.9	
		Min	52.0	6
T7351	Elec. Cond. (2C) & MIN		38.0	PCT

Chemical Composition	SI	FE	CU	MN	MG	CR	ZN	TI	Other	Other	Aluminum
	Max	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.15
Alloy 7075	Min			1.2		2.1	0.18	5.1			REMAIN

SWL 10/07/19

JAN-14-2009 10:56

AM CASTLE METALS

8474568927

P.017

# CERTIFIED INSPECTION REPORT

Alcoa Inc.

PITTSBURGH, PA DAVENPORT WORKS

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet, the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material met the composition limits and had the mechanical properties shown on the face of this sheet.

Malcolm Murphy  
Director of Manufacturing Davenport Works

Kenon P. Young  
Quality Assurance Manager

993937	0				
Ship Date	B.L. No.	Invoice No.	Alcoa No.	Item	Page 2
2009-01-10	3286081	00000	1000062304-1		
P.O. No./Govt Contract No.	Customer	Alcoa Item	Mfg Order		
01-16542	CASTLE A M	G041005634R08	DS-62304-1		

CQR: 0137890.17 -Specification Limits (cont.) -----  
Lot: 407251 - Mechanical, Physical, Metallography, Quantometer Results -----

Temp	Dir	No.→	UTS	TYS	EL4D
		Test	KSI	KSI	PCT
T7351	Long Transv.	3	69.8	58.3	10.3
			69.8	58.2	10.4
			69.8	57.8	10.2

T7351 Elect Cond ±IACS 40.4 40.7 40.5 PCT

Cast Number	Chemical - OES	SI	FE	CU	MN	MG	CR	ZN	TI
H9127044	Actuals	0.06	0.29	1.6	0.02	2.5	0.19	5.7	0.02

This material was melted in the United States or a Qualifying Country [REF DFARS 225.872.1(a)]; it was manufactured in the United States

CASTLE METALS CORP  
DATE RCVD. 1/17/09  
IAC 6879  
APPROVED BY

JAN-14-2009 10:56

AM CASTLE METALS

8474558927

P.018

## SHIP TO:

A M CASTLE & CO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

# KAISER

## ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number

4173294

## SOLD TO:

AM CASTLE & CO- SOLD TO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 01-23160		WORK PACKAGE:	CUSTOMER PART NUMBER: 6879 A97075-60		SHIP RUN/LOAD ID: 101640/19	GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1087294	LINE ITEM: 1	SHIP DATE: 5-OCT-2009	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate	
WEIGHT SHIPPED: 7196 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2024315	GAUGE: 2.5000 IN		DIAMETER/WIDTH: 48.500 IN	LENGTH: 144.500 IN	

## Certified Specifications

AMS 4078/RevG  
ASTM B 209/Rev07  
BSS 7055/RevA  
DPS 4.713/RevAH  
GSS16100/RevG/Amd1

AMS-QQ-A-250/12  
ASTM B 594/Rev06  
CMMP 025/RevS  
EAC MS1011/RevE  
MMS 159/RevN

AMS-STD-2154  
BAC 5439/RevH  
CSTI 006/RevC  
GAMPS 9101/RevB  
PS 21211/RevK

Test Code: 4297

## Test Results

Lot: 485532A6 Cast 271

Drop 21

Ingot 1

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.6 : 71.4 (487 : 492)	58.6 : 59.1 (404 : 407)	10.4 : 11.2

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.8 Min	41.3 Max
(MS/M) :	23.7 Min	24.0 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.21	1.5	0.04	2.5	0.19	5.5	0.04	0.01	0.01	TOT 0.05

*Handwritten signature*  
240719

**KAISER  
ALUMINUM****CERTIFIED TEST REPORT**

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

Serial Number  
4173294

Lot: 485715A7 Cast 271 Drop 21 Ingot 4

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.4 : 72.4 (492 : 499)	59.2 : 60.9 (408 : 420)	11.2 : 11.4

(ASTM E1004)  
(EN 2004-1)

Conductivity %IACS :	40.9 Min	41.2 Max
(MS/M) :	23.7 Min	23.9 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.11	0.21	1.5	0.04	2.5	0.19	5.5	0.04	0.01	0.01	TOT 0.05

**ALLOY LIMITS**

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

**TEST NOTES**

7075-T7351 plate 3.501-4.000" thick, if  
ultrasonically inspected, meets requirements of CMMPO25 per  
SDR CMMPO25-KaiserT-3. 7075-T7351 plate 4.001-5.000" thick,  
if ultrasonically inspected, meets requirements of CMMPO25  
per  
SDR CMMPO25-KaiserT-2.

Metal represented by this test report was immersion  
ultrasonically tested from one side and meets the Class A  
and Class B requirements of all specifications referenced  
on this test report.

*Bill Poynor*  
10/07/19

**CERTIFICATION**

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTIRE ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

**BILL POYNOR, LABORATORIES SUPERVISOR**

*Bill Poynor*

**Castle Metals FP**

HEAT NUMBER 485715A7  
MECHANICAL ID \_\_\_\_\_  
ITEM CODE 6829  
LOT NUMBER \_\_\_\_\_  
PO NUMBER 17121  
RECEIPT DATE 10-12-09  
SUPPLIER KAISER  
SPECIFICATION \_\_\_\_\_  
LCS 10  
COMMENT \_\_\_\_\_  
APPROVED BJ

*Surf*  
*10/10/09*

## SHIP TO:

CASTLE METALS  
C/O CUTTER PRECISION METALS  
1208 NO. 4TH AVE  
KENT, WA 98032

**KAISER  
ALUMINUM**

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

**CERTIFIED TEST REPORT**

Serial Number

4128061

## SOLD TO:

AM CASTLE & CO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 45-24870		WORK PACKAGE:	CUSTOMER PART NUMBER: 6879 A97075-60		SHIP RUN/LOAD ID: 101272/3	GOV'T CONTRACT NUMBER:
KAISER ORDER NO: 1066098	LINE ITEM: 1	SHIP DATE: 28-APR-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE
WEIGHT SHIPPED: 7214 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2017533	GAUGE: 2.5000 IN		WIDTH: 48.500 IN	LENGTH: 144.500 IN

**Certified Specifications**

AMS 4078/RevG  
ASTM B 209/Rev07  
BSS 7055/RevA  
DPS 4.713/RevAH  
GSS16100/RevG

AMS-QQ-A-250/12  
ASTM B 594/Rev06  
CMMP 026/RevR  
EAC MS1011/RevE  
MMS 159/RevN

AMS-STD-2154  
BAC 5439/RevH  
CSTI 006/RevC  
GAMPS 9101/RevB  
PS 21211/RevK

Test Code: 4297

**Test Results**

Lot: 422797A1 Cast 161

Drop 21

Ingot 2

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.8 : 71.0 (488 : 490)	60.2 : 60.6 (415 : 418)	9.7 : 10.4

(ASTM E1004)

Conductivity %IACS :	41.4 Min	41.6 Max
(MS/M) :	24.0 Min	24.1 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.22	1.5	0.02	2.4	0.19	5.6	0.02	0.01	0.01	TOT 0.03

*Conf*  
*10/07/19*

**KAISER  
ALUMINUM****CERTIFIED TEST REPORT**Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586Serial Number  
4128061

\* Lot: 422799A7 Cast 161 Drop 29 Ingot 2

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.2 : 72.5 (484 : 600)	58.1 : 61.4 (401 : 423)	9.8 : 10.0

(ASTM E1004)

Conductivity %IACS :	40.6 Min	40.9 Max
(MS/M) :	23.5 Min	23.7 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.20	1.5	0.02	2.7	0.19	5.7	0.02	0.01	0.01	TOT 0.03

**ALLOY LIMITS**

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.06
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.16

Aluminum Remainder

**TEST NOTES**

Metal represented by this test report was immersion  
ultrasonically tested from one side and meets the Class A  
and Class B requirements of all specifications referenced  
on this test report.

CASTLE METALS - KENT	
DATE REC'D <u>5-2-08</u>	CUST. _____
REC'D FROM <u>Kaiser</u>	CUST. P.O. _____
APPROVED BY <u>AM</u>	AMC S/O _____
TR # <u>422799A7/1007799A7</u>	
WE HEREBY CERTIFY THAT THESE ARE CORRECT COPIES OF REPORTS NOW ON FILE AT A.M. CASTLE & CO. BY: <u>JAC: 6879</u>	

*ml*  
*10/6/7/19*

**CERTIFICATION**

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR

*Bill Poy*